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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/981,614	10/16/2001	Eiji Hamamoto	04558/058001	5817

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EXAMINER

LINDSAY JR, WALTER LEE

ART UNIT	PAPER NUMBER
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2812

DATE MAILED: 07/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/981,614

Applicant(s)

HAMAMOTO ET AL.

Examiner

Walter L. Lindsay, Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,3,6-11,13 and 16-20 is/are rejected.
- 7) ☒ Claim(s) 2,4,5,12,14,15 and 21-24 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3, 6-11, 13 and 16-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Kouya U.S. Patent No. 6,552,763.

Kouya discloses a liquid crystal display panel avoiding display unevenness and manufacturing method.

Claims 1, 3 and 6-10 are disclosed here in.

Claims 11, 13 and 16-20 are disclosed here in.

The polarizer film 1a shown in FIG. 2 comprises one PVA layer 7(**polarizer**), a pair of TAC layers 6a and 6b(**protective layer**), and layers of other components. The PVA layer 7 is constituted, for example, of a film made of a stretched polyvinyl alcohol into which iodine and the like is doped or impregnated. The PVA layer 7 is disposed approximately at the central portion of the polarizer film 1a, and the TAC layers 6a and 6b are disposed directly on both sides of the PVA layer 7. The layers of other components may be disposed, if necessary.

More particularly, the polarizer film 1a on the side of the display surface has the following structure. As shown in FIG. 2, the polarizer film 1a on the side of the display surface has a multilayer structure which comprises, from the side of the surface stuck on the **liquid crystal substrate assembly 10**, a separator 4, a glue or **adhesive layer** 5, a triacetylene cellulose (TAC) layer 6a, a **PVA layer** 7, a **TAC layer** 6b, an antiglare (AG) layer 8, and a **protective film** 9. Also, the polarizer film 1b on the side of a backlight source has a structure similar to that of the polarizer film 1a shown in FIG. 2, except that the AG layer 8 is not provided. Therefore, a detailed description on the polarizer film 1b is omitted here (col. 7 line 61- col. 8 line 16).

First, a plurality of polarizer films, which have substantially the same size and the same structure, for example, the structure shown in FIG. 2, were prepared. Then, a weight of each polarizer film was measured. In order to remove moisture contained in the polarizer films, the polarizer films were left in an incubator kept at a predetermined temperature for a predetermined time. This heat treatment corresponds to the above-mentioned first heat treatment process. Every time after elapsing a predetermined time, one polarizer film was taken out of the incubator, and the weight of the polarizer film was measured. From the difference of the weights of the polarizer film before and after the heating, the rate of moisture reduction of the polarizer film was calculated.

FIG. 5 is a graph showing the rates of moisture reduction with respect to time and temperature. The ordinate of the graph shows the rates of moisture reduction of the polarizer films, and the abscissa of the graph shows times during which polarizer films were left in the incubator, that is, heating times. The temperatures in the

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incubator, that is, the heating temperatures of the polarizer films, were set to 40, 60 and 80 degrees Celsius respectively, and, in the graph, there are shown three curves corresponding to the respective temperatures. **The humidity in the incubator was set to 30 percent throughout the process, and all the polarizer films used have substantially the same structure and size (moisture content).**

Among the layers constituting each polarizer film, it is considered that the TAC layer contains the most moisture. However, it is difficult to measure the rate of moisture reduction within only the TAC layer. Therefore, in this embodiment, the rate of moisture reduction of the polarizer film was measured from the rate of change in weights of the polarizer film before and after the heat treatment.

As shown in FIG. 5, the rate of moisture reduction of the polarizer film disposed in an incubator becomes larger as the heating temperature becomes higher, and converges toward a predetermined value, which depends on the heating temperature. For example, when the heating temperature is 40 degrees Celsius, the rate of moisture reduction of the polarizer film becomes large as the heating time becomes long, and converges toward approximately 2 percent.

Therefore, when the polarizer films have substantially the same size and structure, it is possible to control the rate of moisture reduction of the polarizer films approximately to a desired value, although some dispersion may exist. Also, by adjusting the heating time of the first heat treatment process, it is possible to control the rate of moisture reduction of the polarizer film to a desired value. Further, by adjusting both the heating temperature and the heating time, it is possible to control the

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rate of moisture reduction of the polarizer film to a desired value (col. 11 lines 60 –col. 12 lines 44).

Laminated means to layer, this process is described above.

Allowable Subject Matter

3. Claims 2, 4,5, 12, 14 are 21-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter: the prior art, either singly or in combination fails to anticipate or render obvious, the limitations of:

...wherein surface roughness of the polarizing plate in a direction perpendicular to the stretching direction is 0.04 μm or less on the basis of the centerline average roughness, required by claims 2 and 12 as it depends from claims 1 and 11 respectively.

The prior art, either singly or in combination fails to anticipate or render obvious, the limitations of:

...wherein the polarizer is prepared by stretching a hydrophilic polymer film while dyeing the hydrophilic polymer film in a dye bath containing a dye selected from the group consisting of dichroic iodine and dichoric dyestuff and crosslinking in a crosslinking bath containing a crosslinking agent, required by claims 4 and 14 as it depends from claims 1 and 11 respectively.

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The prior art, either singly or in combination fails to anticipate or render obvious, the limitations of:

...wherein the hydrophilic polymer film is a polyvinyl alcohol-based film, as required by claims 5 and 15 as they depend from claims 1 and 11 respectively.

The prior art, either singly or in combination fails to anticipate or render obvious, the limitations of:

...wherein surface roughness of the polarizing plate in a direction perpendicular to the stretching direction is $0.03\mu\text{m}$ or less on the basis of centerline average roughness, as required by claims 21, 22 and 23 as they depend from claims 1 and 11 respectively.

Lastly the prior art, either singly or in combination fails to anticipate or render obvious, the limitations of:

...wherein surface roughness of the polarizing plate in a direction perpendicular to the stretching direction is $0.01\mu\text{m}$ or less on the basis of centerline average roughness, as required by claim 24 as they depend from claim 11.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

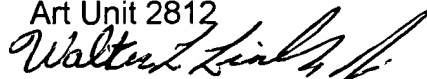
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter L. Lindsay, Jr. whose telephone number is (703) 306-5727. The examiner can normally be reached on Monday-Thursday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John F Niebling can be reached on (703) 308-3325. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-3325.

Walter L. Lindsay, Jr.
Examiner
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A handwritten signature in black ink, appearing to read "Walter L. Lindsay, Jr.", written over the printed name.

July 9, 2003